

REMARKS

Applicants acknowledge with appreciation the Examiner's allowance of claims 1-28 and 39-45 and the indication of allowability of claims 30 and 38.

The disclosure is objected to because of an informality. In view of the amendment thereto, this objection is respectfully requested to be withdrawn.

Claims 29 and 37 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,905,673 ("Khan"). Applicants respectfully traverse this rejection.

Claim 29 defines a method of simultaneously reading a plurality of memory cells and recites "providing a plurality of memory cells, each being programmable to an energy-absorbing state" and "programming at least one of said plurality of memory cells to said energy-absorbing state" and "reading said plurality of memory cells simultaneously by sensing the absorption or transmission of a read energy pulse through each of said plurality of memory cells." Khan does not anticipate this method.

Khan may disclose a simultaneous read method for multiple bits using a sense amplifier, however, the reference does not disclose "reading said plurality of memory cells simultaneously by sensing the absorption or transmission of a read energy pulse through each of said plurality of memory cells," as recited by claim 29. As expressed in the Office Action at page 2, the Khan reference discloses reading cells by detecting whether a voltage is stored in the cell, e.g., "[f]or a single bit per cell, the simple absence or presence of current through the memory cell 30 is determined . . . the amount of current passing through the cell 35 is compared against a set number . . . reading of memory cells in the voltage-mode is preferred." (Khan, col. 6, lines 51-62). Comparing the amount of current to a reference current, as performed by Khan, is different from "sensing the absorption or transmission of a read energy pulse," because absorption of energy, as claimed, is different from resistance to current, per Khan.

Because Khan lacks disclosure of the claimed sensing method, it does not anticipate independent claim 29. Claim 37 depends from independent claim 29 and is, therefore, patentable over Khan for at least the same reasons. Applicant respectfully requests that the 35 U.S.C. § 102(b) rejection of claims 29 and 37 be withdrawn and these claims allowed.

Claims 29 and 37 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,614,686 ("Kawamura"). Applicants respectfully traverse this rejection.

Claim 29, defined and discussed above as patentable over Khan, is likewise patentable over Kawamura. Kawamura may disclose a simultaneous read method for multiple bits, however, the reference does not disclose "reading said plurality of memory cells simultaneously by sensing the absorption or transmission of a read energy pulse through each of said plurality of memory cells," as recited by claim 29. Kawamura utilizes non-conductive charge trapping gates (col. 1, lines 39-42; col. 6, lines 13-15), which are read out by detecting a voltage representing whether or not electrons are trapped in the second trapping gate region of the memory elements (col. 2, lines 46-50). Comparing output voltage to a reference, as performed by Kawamura, is different from "sensing the absorption or transmission of a read energy pulse," because absorption of energy, as claimed, is different from trapped electron impact on voltage, per Kawamura.

Because Kawamura lacks disclosure of the claimed sensing method, it does not anticipate independent claim 29. Claim 37 depends from independent claim 29 and is, therefore, patentable over Kawamura for at least the same reasons. Applicant respectfully requests that the 35 U.S.C. § 102(e) rejection of claims 29 and 37 be withdrawn and these claims allowed.

Claims 31-36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Khan and Kawamura, in view of U.S. Patent No. 6,678,200 ("Perner"). Applicants respectfully traverse this rejection.

Independent claim 29 is discussed above as being patentable as not anticipated by either Khan or Kawamura because these references fail to disclose, teach or suggest "reading said plurality

of memory cells simultaneously by sensing the absorption or transmission of a read energy pulse through each of said plurality of memory cells," as recited by claim 29. Perner is cited by the Office Action for its alleged teaching of use of an MRAM with multiple blocks for simultaneous reading. Even if Perner does disclose such a device, which Applicants do not concede, this teaching would not remedy the deficiencies of Khan and Kawamura so as to teach or suggest the method of claim independent 29. For at least this reason, claims 31-36, which depend from claim 29, are patentable over the combined references. Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claims 31-36 be withdrawn.

In view of the above amendment and remarks, Applicants believe the pending application is in condition for allowance. A notice of allowance for all pending claims is respectfully requested.

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Respectfully submitted,

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